ABSTRACT

Background: Cancer Stem Cells are a small subpopulation of cancer cells that have ability of self-renewal and are potent to differentiate into progenitor cells. CD44 is a Cancer Stem Cell marker which is involved in regulation of growth, survival, differentiation and migration through binding with growth factors. Hence it serves as a prognostic tool in Oral Squamous Cell Carcinoma.

Aim and objective: To evaluate the expression of CD44 in tissues of normal mucosa, Oral Squamous Cell Carcinoma of Tongue and Buccal Mucosa and to correlate CD44 expression in different gradings of Oral Squamous Cell Carcinoma.

Materials and methods: To investigate CD44 expression in Formalin Fixed Paraffin Embedded tissues of normal mucosa (n=6), Oral Squamous Cell Carcinoma of Tongue (n=16) and Oral Squamous Cell Carcinoma of Buccal Mucosa (n=16) using mouse monoclonal CD44 primary antibody and SS Polymer HRP/DAB detection kit by Immunohistochemistry. Tonsil serves as a positive control for CD44.

Results: All the samples of our study were positive for CD44. Normal mucosa exhibited strong staining and high percentage of CD44 positive cells. When tumor sub-site was not taken into account, intensity and percentage of positive cells for CD44 increased with decreasing grades of histologic differentiation in which intensity showed significant results **(0.009*)**. With regards to the sub-site, poorly differentiated tongue tumors exhibited weak staining and less percent of positive cells (11 to 24%) compared to that of the tumors of buccal mucosa.

Conclusion: Staining intensity of CD44 was found to be an independent prognostic factor rather than the percentage of positive cells in Oral Squamous Cell Carcinoma. CD44 proved to be an efficient biomarker in addressing the tumor aggressiveness and poor outcome with respect to the sub-site, tongue.

Key words: CD44, Oral Squamous Cell Carcinoma, Hyaluronic acid